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ABSTRACT

This document discusses the issues that need to be considered by the education and training system as it responds to the changing needs of industry in Great Britain. Following a general introduction, the development of quality management ideas is traced. The underlying principles of safety and risk management are clarified and the implications of associated costs are discussed. A suggestion is made that part of the success of the introduction of quality management systems was based on clear definitions and recommend definitions that may be considered in regard to safety and risk systems. Amendments to the 1987 industry standard are proposed to produce a model document on risk management systems. Recommendations for steps to be taken by education and training systems are included. Appendix 1 provides definitions and issues relating to quality management systems. Appendix 2 contains a model standard for risk management systems. Appendix 3 includes legal definitions of employee, occupier, and employer. (CML)

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Safety management systems

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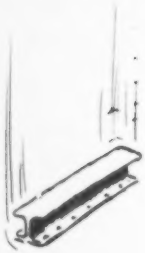

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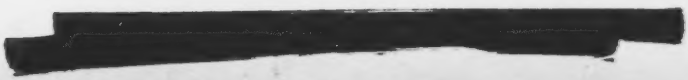

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Foreword

This document is a preliminary paper prepared for the Further Education Unit by A T Fido and D O Wood, formerly of Manchester Polytechnic. It is a discussion of the issues that need to be considered by the education and training system as it responds to the changing needs of industry.

FEU wishes to thank the authors for their detailed and at times very technical paper. It takes up ideas on quality management systems as raised in publications such as *Quality Assurance* (FEU, 1988) and suggests ways in which they might be applied to the concept of safety management (although they argue that it would be preferable to use the term 'risk' rather than 'safety').

After a general introduction the authors trace briefly the development of quality management ideas. They then provide clarification of the underlying principles of safety and risk management, and discuss the implications of the associated cost. They suggest that part of the success of the introduction of quality management systems was based on clear definitions, and recommend definitions that may be considered in respect of safety and risk systems. To facilitate discussion, they have proposed amendments based on the format of BS5750 to produce a model document on risk management systems.

Finally, the points requiring discussion within industry and the education service are collated, together with suggestions of steps to be taken by education and training systems to initiate discussion.

An earlier draft of the paper was distributed to a range of industrial and educational bodies, and their comments have been considered in the preparation of this paper. Readers are invited to submit comments on the proposals in the paper to Albert Clyde at the FEU (tel: 01-321 0433 ext. 236).

Albert Clyde
FEU Development Officer

Introduction

Over the past ten years there has been a significant introduction of quality assurance systems into British companies, in a range of manufacturing industries. It started as a quasi-statutory obligation to customers with high buying power, especially the MOD and nationalised industries, who required their suppliers to prove an adequate level of control over product quality. This policy was often interpreted as better inspection leading to greater assurance of a product's conformance to specification, but did not necessarily reduce the wasted material and added value costs of scrapped products.

Experience, therefore, has led to the evolution of manufacturing control systems which place more emphasis on preventative actions to avoid non-conforming products. The benefits of quality assurance systems, such as reduced cost of failure, have become more obvious through quality cost analyses. Companies have harnessed the system to develop better communications, coherent links between product development and manufacturing, and employee motivation leading to overall business management. The events and rationale required to manage product quality are frequently found to apply to all business objectives. To remain competitive, companies are adopting total quality management as the corporate culture and main management system.

Safety management, on the other hand, is often an after thought, despite safety being a statutory requirement in companies. It is thought of as an expense which cannot be recouped. The introduction of quality management meets little, if any, resistance from employee representatives, yet suggestions to implement safety management systems often raise emotional issues. Nevertheless, there are many features which suggest that systems for providing safety should be managed and assessed in the same way as those that are now well established for controlling the quality of products and/or service. (We are not including here the safety of the product in use.)

This paper is intended to examine the concept of an acceptable, adaptable standard for a safety management system and to:

- introduce some of the issues;
- propose possible steps forward;
- test industrial and educational opinion;
- suggest appropriate action from the education and training system.

It also looks at how compliance to the standard might be registered and monitored through an integrated approach by third-party auditing bodies.

The proposed system would apply to any service, process or installation. It would prescribe the safety of a product in service to a standard such as that specified by the recent EEC guideline directive, ISOCEN/TC114 N91.

This paper looks at how and why quality management systems have developed over the past few years and examines a parallel case for management of safety. It seeks the correct terminology and steps to make a more thorough examination of the case for and implementation of a safety management system standard.

BS5750 and quality management

The BS5750 (1987) standard specifies the elements of an organisation's quality system, but not the product specification or configuration for contractual agreement between supplier and customer. However, it does anticipate that, for all stages of work from contract to finished product, there will be unambiguous statements on which quality characteristics should be present and how they will be assessed. Product grade is then decided by the customer and supplier, but the level of non-conformance to specifications is determined by the thoroughness of the system and how well it is implemented in practice.

Formal internal and external (third party) audits can be used to examine the elements being implemented. These cover all the inputs from planning to installation and service. The materials, processes, people, checks and plans must be documented such that intended and actual events, through recorded information, can be compared. The elements fall into broad categories:

- planning for production;
- controlling inputs;
- inspection;
- corrective action;
- communication;
- review.

Stebbing* and Murphy** offer more details of standards and quality assurance philosophy.

To gain entry to the DTI *Register of Assessed Companies*, a company must be audited by a third party and judged to comply with the requirements of BS5750. Follow-up audits check whether the system is being properly maintained.

The benefits of a quality system

BS5750 was first published in 1979 to provide a national interpretation for a quality standard and to reduce, if not replace, the numerous supplier audits by large organisations such as the nationalised industries.

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*Stebbing, L., *Quality Assurance*, Ellis Horwood Ltd, 1986.
**Murphy, J. A., *Quality in Practice*, Gill & McMillan Ltd, 1986.

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Once a company obtains BS5750 registration, there is pressure on its suppliers to install a suitable quality assurance system and, at best, become registered to BS5750. This chain reaction has been a major driving force in the adoption of quality standards. Companies which have adopted the philosophy of quality assurance through prevention and exploited the documentation of the system have found other benefits which reduce costs. These include a reduction in the number of components that are rejected or need to be reworked, lower stock levels and less 'inspection'. Better communication with the workforce, increased motivation and greater employment stability were a significant bonus for employees and employer. To reach this level of organisational culture, quality must be given equal ranking with productivity and cost.

Extending corrective action beyond mere reaction to customer complaints, making objective measurements of non-conformance at critical stages in the production cycle, and involving all employees in seeking solutions can gradually reduce the level of rejects. Thus problem solving processes and zero defect campaigns become self-sustained commonsense and the need for external pressure and justification lessened. Management teams then set, and continuously aim for, lower annual targets of non-conformance. Committed companies now have failure costs of less than 1% of turnover and total quality costs of less than 5% of turnover. This system is then a management strategy rather than an inspection regime. Thus the key change is in the attitude of management and employees.

The evolution of safety management

Present legislation on health and safety at work has been developed alongside the formulation of a Quality System, commencing with the Robens Report* in 1972. The Factory Act has been a statutory requirement for many years but the report pointed to a lack of systematic implementation of the intention of the Act. The main reason was the attitude in companies — safety was not on their business agenda. For many employers it is regulated and enforced from outside. However, sensible employers should manage safety as part of the company business in the best interests of shareholders, employees and the community at large.

More recently, the concept of Safety Assurance has been used to emphasise the safety of products to satisfy more fully the customer's requirements and expectations. Products which carry higher risk, such as nuclear installations, chemical plants and moving electromechanical devices, have been the main areas considered. In one such case Costain plc developed and implemented a safety assurance system in agreement with the Health and Safety Executive**. This showed that risk could be reduced by the statement and implementation of a safety policy, appropriate revision of the management structure and operating procedures, and recording of events to allow data analysis and corrective action. Although some companies have safety management systems of this type, the concept is by no means widespread. No cases have been found of an integrated approach to the management of risk and quality for operational systems.

Safety cost

Companies began to take quality management seriously when they realised that lack of organisation and control was costing a lot of money. Furthermore, 50% of that cost could accrue from suppliers of raw materials and sub-components, so commercial reality spread the need for surveillance to an ever-growing number of companies. Consumer opinion, recognising that quality differentiated products and services of like kind, also had a commercial effect. Thus quality is at the centre of commercial success, whereas safety is not. Yet accidents place a cost on companies, but the total cost, including damage, disruption, lost custom and personnel costs, are not audited.

A large cost is hidden in the near misses that occur in a ratio of 600:1 to serious accidents***. This amounts to an average of 1,240 per accident, involving

*Report of the Committee (1970-72) for Safety and Health at Work, chaired by Lord Robens and presented to Parliament by the Secretary of State, July 1972.

**Stafford, R., *Safety Assurance — The Way Ahead*, Safety Practitioner, September 1986.

***Bird, F. E., *International Safety Rating*, International Loss Control Institute, 1978

three or more days off work, excluding fatal accidents. Bird's data suggests an annual cost of 100,000 per year for a medium-sized company.
As with product quality, these costs must be passed on to the customer or met by insurance companies, which could be a leading agent in promoting risk management systems by linking premium reduction to the presence of a registered system.

Commitment and attitude to safety management

There could be several reasons why safety is not seen as a commercial factor but a statutory obligation to employees. As with quality, at first managers do not understand the full implication to their business of managing risk; often this is hidden in insurance cover rates. Consequently, commitment to establishing, implementing and reviewing a safety management system is often lacking. To be fair, safety is only one of many matters calling for the manager's time. The Health and Safety Executive produce codes of practice on the interpretation of the Health and Safety at Work Act, but these do not provide a precise, cohesive explanation of the management system required. Initiating a system will have a cost, and therefore there is a reluctance to think beyond the minimal obligatory response to the Health and Safety at Work Act. A system would need auditing and most managers would claim that customer quality assurance audits already cost the auditor's fee and take up enough of their time.

Large companies may be able to afford to establish a risk management system, and many do. However, there is a problem with medium and small companies which feel unable to introduce such systems. Customers can exert influence by their reaction to the costs their vendors are incurring and passing on. For example, stability of source of supply through long-term collaboration with selected companies is becoming a tactic in quality management. Since risk management also influences a vendor's stability and manufacturing costs, it should be subject to surveillance by customers. Some customers, particularly large ones such as local authorities, on occasions require suppliers to establish and implement a safety policy.

The statutory audits by the Health and Safety Executive do not serve the purpose totally because their resources are inadequate and the concept is one of obligation rather than collaboration. Companies that really succeed in the provision of quality do so because they wish to come to grips with the problem internally rather than because of externally imposed regulations, and the same will apply to safety issues. Audits of a Safety Management Programme would pay attention to the manner in which evidence of risk, hazards and accidents had been used to develop a safer system, along the lines of the Zero Defect Concept of Quality Management.

Auditing a safety management system

Trade Unions (Stafford) have been sceptical that an internally audited safety management system would prevent employers putting workers at unnecessary risk. It would seem that audits by a third party need to be an element of an acceptable system. Certainly, in quality management, even the most recalcitrant managers accept that external audits improve the objective judgement of how well their management system is working. The Royal Society for the Prevention of Accidents (ROSPA) has recently published a proposal for international safety rating audits using internal and external auditors, and this could be applied by larger companies. However, separate approaches to safety and quality systems would seem to be wasteful of resources and likely to give a less effective result.

Setting up and auditing a system needs a 'System Standard' to guide compilation of documented, practical procedures and audit objectives. For risk management, Section 2 of the Health and Safety at Work Act prescribes the requirements, but is not a working document.

Health and Safety Executive Guidance Notes have not generally resulted in the organisation and documentation of programmes to manage safety, as has happened in quality management*. It is the medium to small companies which pose the main barrier to implementation of safety management, as was the case for quality management. Now that many such companies have come to understand and exploit quality management, developing safety in tandem with it is likely to be much more acceptable.

*Ward, *Management of Safety Conference (MANOSAF) — The View of the Health and Safety Executive*, London, February 1987.

A model risk management system

Safety must always be an attribute of production systems. To help consider the value of a standard for risk management systems, a tentative model standard based on BS5750 is proposed in Appendix 2. It should be read in conjunction with BS5750 Part 2 (1987).

For the purposes of the model, terms have been adopted, as far as possible, compatible with BS4778 and the ISO 3rd draft proposal *Guide to Inclusion in Standards of the Concept of Safety and to the Preparation of Safety Standards*. Other health and safety terminology used in the model has been taken from currently accepted practice in the fields of legislation, interpretative working codes and case law. (In addition to the terms defined below, other relevant definitions are given in Appendix 3.)

Definitions

In talking about concepts and systems of management, commonly understood terminology is a vital link in the implementation of ideas. A clear working definition of quality has been a key factor in the general appreciation of how to obtain products and services which conform to intended levels of quality. Some definitions and comments which may be useful in the clarification of issues arising with safety management systems are stated below. (Comparable definitions relating to quality management systems are given in Appendix 1.)

Safety — Freedom from unacceptable risks/personal harm (ISO).

This definition is really a requirement and expectation and the difficulty is in deciding what is unacceptable. The methods by which freedom is attained are the ones which need system management. The definition is not as helpful as that for quality as a basic building block for compiling an efficient and effective safety management system.

Hazard — A set of conditions in the operation of a product or system with the potential for initiating an accident sequence.

Clearly any system would need to control hazards, not just the activating event that could turn a potential hazard into an accident. An accident to people and/or machines is of concern.

Risk — The combined effect of the probability of an undesirable event occurring, and the magnitude of the event (*Safety of Machinery*: BS5304, 1988).

In effect this is a combination of the probability and consequence of failure. It is equivalent to a level of quality which should match the probability of a product conforming to expectation. Deciding acceptable risk is the same as deciding the acceptable level of quality against the consequence of not satisfying the customer.

British courts have defined 'safety' as 'elimination of danger' (Latimer v. Lesley: Case under The Factories Act), where danger is the balance between the chance of an accident and the result of an accident. Quantifying risk, using similar ideas as with the concept of quality, points to the need and type of action required. Risk is an emotive word, and yet everybody and every physical process has associations with it in one way or another. Sometimes the risk is there by personal choice.

Quantifying and evaluating risk should provide a specification of acceptable risk or level of safety. It is proposed that a risk specification should be used as the equivalent of a product specification. Organisations would then need to decide risk specifications, bearing in mind the consequence to employees and business stability. Of course, a product specification could include a risk specification, but that does not affect the principle behind this proposal.

A safety management system would then be the organisational structure, responsibilities, activities, resources and events that together provide organised procedures and methods of implementation to ensure the capability of the organisation to meet its established risk specification.

It should be noted that specifying risk does not mean condoning accidents, since managers of a service and process would still need to recognise their statutory obligations under the Health and Safety at Work Act.

Four points for discussion

1. A fundamental definition should be developed that will underpin the correctness of management decisions.

   The term *risk* is preferred to *safety* where it is the probability of an event balanced against commercial factors and statutory requirements. A management decision is required on acceptable probability and how to measure it objectively.

   A *zero event concept* (translated from the 'zero defect concept') would, in time, take over as a continuous improvement concept.

2. A standard which defines clearly for management what a management system should consist of should have the following essential elements:

   - management organisation and responsibility for the control of risk in all the activities in the company;
   - clear statements of responsibility and accountability for implementing safety procedures;
   - operating procedures to implement a policy that controls all the necessary physical and human inputs;
   - specification of risk at all stages, to be agreed, documented and reviewed;
   - records of events — positive documented action where events do not conform to specification;
   - corrective action in looking for continual refinement to lower risk;
   - communication through formally reported and accountable meetings, internal audits and a company officer with direct responsibility to senior management.

   Much of this is already done by companies, but it needs to be specified more precisely.

   Appendix 2 gives an outline of a risk management system standard.

3. Auditing by second and third parties could be for assessment of quality and risk management systems. The latter might be an optional extra, so it does not upset the developed place of quality audits.

4. A standard for collating safety costs should be considered.

What is required of education and training?

1. A forum to make recommendations on:

   - practical methods of developing a relationship in managing risk and quality;

   - the establishment of agencies to be involved in the planning and implementation of safety management systems.

2. Preparation of people to form cross-disciplinary teams which will:

   - formulate a risk management system standard;

   - prepare curricula for the training of people who will implement the standard.

3. Seminars for senior executives to commit them to commercial acceptance of risk management.

4. Development of management and employer representatives (and others) on the preparation of risk management programmes in-company.

5. Extension of Lead Assessor and Internal Auditor courses to include auditing of risk management systems.

6. Bridging courses for safety advisors, factory inspectors and others on the principles of safety management systems and auditing techniques.

7. Bridging courses for quality assurance representatives on the specific issues of hazards, risk and safety regulations.

Appendix 1. Definitions and issues relating to quality management systems

Quality — conforming to customer requirements and expectations

In many cases there is a published product standard which sets the basic requirements. In other cases the requirements are best laid down by the supplier. Customers' expectations are less easily definable and usually result from the supplier's subjective judgement after exploring customers' views. To meet the expectations, any organisation must translate them into objective statements if the workers, machines and materials are to provide a product and service which conforms. The accuracy of the translation and the thoroughness of its implementation are major factors in the (commercial) success of any venture, that is the degree of conformance to customer requirements and expectations.

Grade — an indication of the degree of refinement.

The number of attributes stated and the reliability with which they are achieved will decide grade. Products and services intended for the same general market may have differing grades to allow for differing customer needs.

Specification — the series of statements that prescribe in detail the requirements with which the product or services has to comply.

For success an organisation has to be able to specify even the subjective attributes of the intended product at service. Without a clear specification, Quality may be thought of as 'goodness' and not be reproducible. Once prepared, the specification is an invaluable aid to meeting customer requirements.

Quality of Design — the culmination of how effectively an organisation:

- translates customer requirements and expectations into appropriate specifications;
- exploits knowledge, materials, machines and processes;
- facilitates quality of conformance through planning for manufacture.

Sometimes products of a higher grade are said to have a higher quality of design than those for a similar purpose but targeted at a cheaper price bracket. This interpretation is not helpful; in fact the opposite can be true.

Similarly, the word grade is not compatible with the world of marketing. Instead, terms such as high quality are used. These terms do not fit with the above definition of quality; either the output conforms or it does not.

Level of Conformance — the difference between the specification and the product or service resulting from the endeavours of the supplier.

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Appendix 2. A model standard for risk management systems

To help consider whether a system standard would be useful and effective, this appendix proposes a standard based on amendments to BS5750 to provide the format for a tentative and unofficial model. It should be read in conjunction with BS5750 Part 2 (1987).

RISK MANAGEMENT SYSTEM

Parallel to BS5750 Pt 2 (ISO 9002) 1987 *Quality System*

A model for identifying, limiting and controlling risk

This risk management system is prepared to assist in the application of the highest standards of health and safety practice in the planning, maintenance and monitoring of industrial systems.

The occupier will negotiate and seek agreement with all parties affected by the system in producing a policy and introducing procedures to manage risks.

The requirements and expectations will be defined by statutory duties, regulations, codes of practice and standards agreed by employer and employees.

The risk management system is limited to the production, installation and maintenance of products and services and does not cover the safety of the product which should comply with other technical specifications.

Auditing of the risk management system is to be performed by an independent third party.

1. Scope and Field of Application

1.1 *Scope*

This risk management system specifies system requirements for use where a contract between two parties requires demonstration of a supplier's capability to control the processes and work activities that determine the acceptable risk to employees and any other person concerned.

The requirements specified in this system are aimed primarily at detecting and preventing any unacceptable risk during preparation, production, installation and implementation of the means to rectify hazards found in the system.

1.2 *Field of Application*

The requirement to manage risk is a statutory duty and therefore applies in all circumstances where people are at work.

Using appropriate interpretation, this standard should be applicable to any organisation which produces, handles or transports products or services.

2. References

3. Definitions

Appropriate health and safety definitions are listed in Appendix 3.

4. Risk Management System

4.1 *Management Responsibilities*

4.1.1 *Risk Policy*

The occupier shall define and document its policy and objectives for, and commitment to, the control and reduction of risk.

The supplier shall ensure that this policy is understood, implemented and maintained at all levels in the organisation.

The statement of policy and implementation may embrace the objectives and aims of the risk and quality management.

4.1.2 *Organisation*

4.1.2.1 *Responsibility*

The responsibility, authority and interrelation of all personnel who plan, control or verify work shall be defined, particularly for personnel who need the organisational freedom and authority to:

a) initiate action to prevent occurrence of unacceptable risk;

b) identify and record hazards, risks and accidents;

c) initiate, recommend or provide solutions through designated channels;

d) verify the implementation of solutions;

e) control further service or precautions of non-acceptable conditions until the deficiency or unsatisfactory service has been corrected.

4.1.2.2 *Verification, Resources and Personnel*

No change.

4.1.2.3 *Management Representatives*

The occupier (or employer) shall appoint a management representative who, irrespective of other responsibilities, shall have defined authority and responsibility for ensuring that the requirements of this system are implemented and maintained.

4.1.3 *Management Review*

The risk management system adopted to satisfy the requirements of this standard shall be reviewed at appropriate intervals by the occupier (employer) to ensure its continuing suitability and effectiveness. Records of such reviews shall be maintained (see 4.15).

Note — Management reviews normally include assessment of the results of internal risk audits, but are carried out by, or on behalf of, the occupier (employer), e.g. by management personnel having direct responsibility for the system (see 4.16).

BS5750 Paragraph no. and title	***Tentative additions and amendments to BS5750 for documentation of safety system***
4.2 Quality System	*(change to)* Risk Management Systems The occupier (or employer) shall establish and maintain a documented safety system as a means of ensuring that risk control conforms to contractual and statutory requirements. This shall include: • the preparation of documented risk management procedures and instructions in accordance with the requirements of this standard; • the effective implementation of the documented risk management procedures and instructions. *Note:* In meeting specified requirements, timely consideration needs to be given to the following activities: • the preparation of risk reduction plans and a risk reduction manual in accordance with specified requirements; • the identification and acquisition of any controls, (processes, inspection equipment, safety appliances, personal protective equipment and skills) that may be needed to achieve the required safety; • the updating, as necessary, of risk control inspection and testing techniques, including the development of new instrumentation; • the identification of any precautionary requirement *(contd)*

(contd)

involving capability that exceeds the known state of the art in sufficient time for the needed capability to be developed;
- the clarification of standards of acceptability for all features and requirements, including those which contain a subjective element;
- the compatibility of the risk management system, with the production and inspection systems and the applicable documentation;
- the identification and preparation of risk control records (see 4.15).

4.3
Contract Review

(change to)
Risk Management Review

The occupier (employer) shall establish and maintain procedures for risk management review and for the co-ordination of these activities.

Each scheme shall be reviewed by the occupier (employer) to ensure that:
- the requirements are adequately defined and documented;
- any requirements differing from those in statutory duties or work experience are resolved;
- the occupier (employer) has the capability to meet the risk management scheme requirements.

Note: The review activities, interfaces and communication within the occupier's (employer's) organisation should be co-ordinated with employees' representatives and visiting contractors.

(contd)

(contd)

4.4 Document Control	*(no change)*
4.4.1 Document Approval and Issue	*(no change)*
4.4.2 Document Changes/ Modifications	*(no change — except)* *for* International Standard *read* Risk Management System
4.5 Purchasing	*(no change — except)* *reference to* the safety implications of purchased consumables and equipment
4.5.1 General	*(no change)*
4.5.2 Assessment of Sub-contractors	*for* quality *read* risk control *for* supplier *read* occupier (or employer)
4.5.3 Purchasing Data	*(no change — except)* *for* International Standard *read* Risk Management System *to* product *add* process and service
4.5.4	*(no change)*
4.6 Purchaser Supplied Products	*(no change)*
4.7 Product Identification and Traceability	*(no change)*
4.8 Process Control	*(no change)*

(contd)

(contd)

4.8.1 General	*(no change — except)* *for* production *read* control of risk *in* (d) *add* and competence *after* workmanship
4.8.2 Special Processes	*(no change)* *add* This provision will apply in particular to long-term occupational health risks.
4.9 Inspection and Testing	*substitute* equipment and materials *for* product
4.9.1 Receive Inspection and Testing	*substitute* equipment and materials *for* product.
4.9.2 In-Process Inspection	*substitute* equipment and materials *for* product.
4.9.3 Final Inspection and Testing	*(not applicable)*
4.9.4 Inspection and Test Records	*substitute* equipment and materials *for* product.
4.10 Inspection Measuring and Test Equipment	*(not applicable)*
4.11 Inspection and Test Status	*substitute* equipment and materials *for* product
4.12 Control of Non-Conforming	*(no change — except)* *following* product *add* or risk

(contd)

(contd) Product	management service *substitute* repaired or amended *for* reworked *add* or alteration *after* repair *for* purchaser *substitute* employee
4.13 Corrective Action	*(no change)*
4.14 Handling, Storage Packaging and Delivery	Handling, Storage, Packaging and Delivery Risk Control
4.14.1 General	General The occupier (or employer) shall establish, document and maintain risk control procedures for handling, storage, packaging and delivery of a product.
4.14.2 Handling	Handling The occupier (employer) shall provide methods of handling that control the risk of injury to persons.
4.14.3 Storage	Storage The occupier (employer) shall provide storage areas or stock rooms planned to conform to the legislative risk control standards for employees and others. Appropriate methods of access and egress, ventilation, lighting and positive evacuation shall be stipulated.
4.14.5 Delivery	Delivery

(contd)

(contd)	
	(change to) The occupier (employer) shall arrange for the protection of
4.14.4 Packaging	Packaging *(add)* Specific attention must be given to hazardous materials. British Standards and other appropriate marking and labelling codes shall be utilised.
	employees and the public during the loading, transportation and unloading of loads.
4.15 Quality Records	Risk Management Records *(no change — except) for* supplier *read* occupier (employer)
	for quality records *read* risk management records
4.16 Internal Quality Audits	Internal Risk Managements Audits *(no change)*
4.17 Training	Training *(no change)*
4.18 Statistical Techniques	Statistical Techniques *(no change)*

Appendix 3. Definitions

Employee — General interpretation, Health and Safety at Work Act 1974, Section 53, '*Employee means an individual who works under contract of employment, and related expression shall be construed accordingly*'

Occupier — Taken from Redgrave's *Health and Safety in Factories*, 2nd Edition, Judge Fife, 1982. 'There is no statutory definition but case law indicates the following:

Ramsay v Mackie, 1904, '*Occupier plainly means the person who runs the factory. . . . who regulates and controls the work done there.*'

This also applied in Cox v S Cutler & Sons Ltd., 1948. 'It has also been held that owners of a property can still be deemed occupiers even though the property is let out to others.'

Employer — Under the Social Security (Claims and Payments) Regulation, 1979, employer means, in relation to any person, the *employer of that person at the time of the accident.*

Under the Payment of Wages Act, 1960, *employer means any person who is an employer within the meaning of the Truck Acts 1831 to 1940.*

The choice of the alternatives of occupier (or employer) offered in the model is left to the formulators of the company rules when specific situations are envisaged.

Examples

Occupier — The safety of installations, plant and building services used in production would be deemed the responsibility of the occupier of the premises. The workers employed within the premises need not be employed by the occupier. Nevertheless, the occupier is responsible for the safety of all workers and others on the premises.

Employer — The employer under the Health and Safety at Work, etc. Act, 1974, has a duty to ensure the health and safety of all employees of the particular organisation. There is an extended duty to others (visitors).

PICKUP (Professional, Industrial and Commercial Updating) is an initiative by the Department of Education and Science to stimulate the updating role of education and the part colleges, polytechnics and universities can play in meeting the needs of business for post-experience education and training. Regional Development Agents act as focal points for PICKUP in their localities. They link central and local initiatives for adult education and training, co-ordinating and advising on the various elements of the PICKUP programme. For further information please contact:

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The Further Education Unit (FEU) was established by the Department of Education and Science to give guidance and support to the further education system. FEU advocates and seeks to make possible a more co-ordinated approach to curriculum development, in support of its remit to promote, encourage and develop better learning opportunities in further education. For more information, please contact:

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